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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HAN, CLEMENCE S	
ART UNIT	**PAPER NUMBER**
2665	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,257	SREEMANTHULA ET AL.	
	Examiner	Art Unit	
	Clemence Han	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claim 1, 2, 9, 14 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (US Pub. 2001/0032269).

Regarding to claim 1, Wilson teaches a method for use in accelerating throughput of segments from a sender to a receiver, the sender and receiver each including a protocol layer for sending and receiving the segments, the method including: step in which the sender protocol layer transmits segments at a rate of transmission and increases the rate of transmission based on feedback the sender receives from the receiver [0046]; the method characterized by: a step which the sender receives a message including one or more bits ("congestion control bit" in [0043]) set to convey an indication of low congestion; and a step in which, in response to the indication low congestion, the sender increases the data transmission rate so as to achieve increased throughput [0047].

Regarding to claim 2, Wilson teaches the sender protocol layer is a transport layer of transmission control protocol and in the step in which the sender protocol layer transmits segments at a rate of transmission, the sender protocol layer starts a

congestion window at a size of a starting number of segments and initially increases the congestion window by one segment each time it receives an acknowledgement for a segment it has sent [0008].

Regarding to claim 14, Wilson teaches a telecommunication device, including a protocol layer for sending and receiving segments, the telecommunication device also including: means by which the protocol layer transmits segments at a rate transmission and increases the rate of transmission based on acknowledgements indicating successful receipt of the segments [0046]; the telecommunication device characterized by: means by which the telecommunication device receives an indication of low congestion; and means by which, in response to the indication of low congestion, the telecommunication device increases the data transmission rate so as to achieve increased throughput [0047].

Regarding to claim 9, Wilson teaches the sender protocol layer grows the congestion window at the predetermined rate of one segment for every received positive acknowledgement, but adjusts the rate based on standard congestion principles in the event of an indication of other than low congestion [0008].

Regarding to claim 16, Wilson teaches a telecommunication system, comprising a plurality of intermediate nodes and also a plurality of

telecommunication devices, wherein at least one of the telecommunication devices includes a protocol layer for sending and receiving segments, the telecommunication device including: means by which the protocol layer transmits segments at a rate of transmission and increases the rate of transmission based on acknowledgements indicating successful receipt of the segments [0046]; the telecommunication device characterized by: means by which the based on acknowledgements indicating successful receipt of the segments receives an indication of low congestion; and means by which, response to the indication of low congestion, the telecommunication device increases the data transmission rate so as to achieve increased throughput [0047].

Regarding to claim 17, Wilson teaches a computer program product comprising: computer readable storage structure embodying computer program code thereon for execution by a computer processor in telecommunication device having a protocol layer for sending and receiving segments, with said computer program code including instructions for performing: a step in which the protocol layer transmits segments at a rate of transmission and increases the rate of transmission based on acknowledgements the sender receives from the receiver [0046]; the computer program characterized by including instructions for performing: a step in which the telecommunication device receives an indication of

low congestion; and a step in which, in response to the indication of low congestion, the telecommunication device increases the data transmission rate so as to achieve increased throughput [0047].

Regarding to claim 18, Wilson teaches a method for use by a telecommunication device, the telecommunication device including a protocol layer for sending and receiving segments to and from another telecommunication device, the method characterized by: a step in which the telecommunication device performs a process of congestion detection [0043]; and a step in which the protocol layer transmits an indication of low congestion to the other telecommunication device [0045].

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 3, 10-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of RFC 2001 (January 1997).

Regarding to claim 3, Wilson teaches a method for use in accelerating throughput of segments from a sender to a receiver, the sender and receiver each including a protocol layer for sending and receiving the segments, the method including: step in which the sender protocol layer transmits segments at a rate of

transmission and increases the rate of transmission based on feedback the sender receives from the receiver [0046]; the method characterized by: a step which the sender receives a message including one or more bits ("congestion control bit" in [0043]) set to convey an indication of low congestion; and a step in which, in response to the indication low congestion, the sender increases the data transmission rate so as to achieve increased throughput [0047]. Wilson also teaches the sender protocol layer is a transport layer of transmission control protocol and in the step in which the sender protocol layer transmits segments at a rate of transmission, the sender protocol layer starts a congestion window at a size of a starting number of segments and initially increases the congestion window by one segment each time it receives an acknowledgement for a segment it has sent [0008]. Wilson, however, does not teach the sender performs an accelerated start in which the sender sets slow start threshold to a standard initial value and re-initializes the congestion window value to a new predetermined value to achieve increased throughput, and then grows the congestion window at a predetermined rate in respect to received positive acknowledgments. RFC 2001 teaches the sender performs an accelerated start in which the sender sets slow start threshold to a standard initial value and re-initializes the congestion window value to a new predetermined value (step 1 in section 4. Fast Recovery) to achieve increased

throughput, and then grows the congestion window at a predetermined rate in respect to received positive acknowledgments (step 2 in section 4. Fast Recovery). It would have been obvious to one skilled in the art to modify Wilson to use an accelerated start with re-initialized the congestion window value as taught by RFC 2001 in order to improve throughput (section 4. Fast Recovery Line 1-4).

Regarding to claim 10, RFC 2001 teaches the step of in which the sender increases the data transmission rate is performed after a connection between the sender and the receiver is first established, and further wherein the congestion window is initially set to a higher value than is used in standard transmission control protocol (step 1 in section 4. Fast Recovery).

Regarding to claim 11, Wilson teaches the protocol layer is a transmission control protocol layer and the indication of low congestion is based on the value of a bit in a header or is otherwise provided with a received TCP SYN or TCP SYN/ACK sent to the sender by either the receiver or by an intermediate node along the communication path or by centralized node outside or along the path [0047].

Regarding to claim 12, RFC 2001 teaches the step of increasing the data transmission rate is performed after transferring to a new path between the sender and the receiver for an existing connection, and further wherein the congestion

window for the new path is initially set to the value for the congestion window when the path transfer occurred (step 1 in section 4. Fast Recovery).

Regarding to claim 13, Wilson teaches the protocol layer is a transmission control protocol layer and the indication of low congestion is based on the value of a bit in a header or is otherwise provided with a received TCP ACK sent to the sender by either the receiver or by an intermediate node along the communication path or by a centralized node outside or along the path [0047].

Regarding to claim 15, Wilson teaches a telecommunication device, including a protocol layer for sending and receiving segments, the telecommunication device also including: means by which the protocol layer transmits segments at a rate transmission and increases the rate of transmission based on acknowledgements indicating successful receipt of the segments [0046]; the telecommunication device characterized by: means by which the telecommunication device receives a message including one or more bits ("congestion control bit" in [0043]) set to convey an indication of low congestion; and means by which, in response to the indication of low congestion, the telecommunication device increases the data transmission rate so as to achieve increased throughput [0047]. Wilson also teaches the sender protocol layer is a transport layer of transmission control protocol and the means by which the sender

protocol layer transmits segments at a rate transmission includes means by which the sender protocol layer starts a congestion window a size of a starting number of segments and initially increases the congestion window by one segment each time it receives an acknowledgement for a segment it has sent [0008]; Wilson, however, does not teach the sender performs an accelerated start in which the sender sets slow start threshold to a standard initial value and re-initializes the congestion window value to a new predetermined value to achieve increased throughput, and then grows the congestion window at a predetermined rate in respect to received positive acknowledgments. RFC 2001 teaches the sender performs an accelerated start in which the sender sets slow start threshold to a standard initial value and re-initializes the congestion window value to a new predetermined value (step 1 in section 4. Fast Recovery) to achieve increased throughput, and then grows the congestion window at a predetermined rate in respect to received positive acknowledgments (step 2 in section 4. Fast Recovery). It would have been obvious to one skilled in the art to modify Wilson to use an accelerated start with re-initialized the congestion window value as taught by RFC 2001 in order to improve throughput (section 4. Fast Recovery Line 1-4).

5. Claim 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Qaddoura (US 6,646,987).

Regarding to claim 4-8, Wilson teaches a method for use in accelerating throughput of segments from a sender to a receiver, the sender and receiver each including a protocol layer for sending and receiving the segments, the method including: step in which the sender protocol layer transmits segments at a rate of transmission and increases the rate of transmission based on feedback the sender receives from the receiver [0046]; the method characterized by: a step which the sender receives a message including one or more bits ("congestion control bit" in [0043]) set to convey an indication of low congestion; and a step in which, in response to the indication low congestion, the sender increases the data transmission rate so as to achieve increased throughput [0047]. Wilson, however, does not teach specific wireless access protocol to be used. Qaddoura teaches TCP congestion control in wireless environment 10. It would have been obvious to one skilled in the art to modify Wilson to be used in different access protocol as taught by Qaddoura in order to optimize transfer rate in different network using TCP (Column 8 Line 14-34).

Response to Arguments

6. Applicant's arguments filed on June 15, 2005 have been fully considered but they are not persuasive.

In response to pages 8-9, the applicant argues that Wilson does not teach sender receiving a message including one or more bits set to convey an indication of low congestion. Wilson teaches sender receiving a message (ACK) including one or more bits ("congestion control bit" in [0043]) set to convey an indication of low congestion ("ACK marked with the data congestion information" in [0043]).

In response to page 10-12, the applicant, further, argues that RFC2001 discloses the procedures in case of receiving an indication of high congestion and does not teach re-initializing the congestion window value to a new predetermined value to achieve increased throughput in response to an indication of low congestion. RFC2001, also, teaches the procedures in case of receiving an indication of low congestion ("moderate congestion" in line 4 of section 4. Fast Recovery) and teaches re-initializing the congestion window value to a new predetermined value (step 1 in section 4. Fast Recovery) to achieve increased throughput in response to an indication of low congestion ("moderate congestion" in line 4 of section 4. Fast Recovery).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (571) 272-3158. The examiner can normally be reached on Monday-Thursday 7 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. H.

Clemence Han
Examiner
Art Unit 2665

STEVEN NGUYEN
PRIMARY EXAMINER